

reading. The book is a great contrast to the other recent English work on the same subject, by Dr. Fleming, which is both readable and interesting. But we feel that there is a place also for a book such as Mr. Parr's, in which short accounts of many specific experiments are given, and the book will be of value to engineers as well as in a teaching laboratory.

D. K. M.

BURMA.

Burma under British Rule—and Before. By John Nisbet, D.C.E.C. Two volumes. Pp. xvii + 912. (Westminster: Archibald Constable and Co., Ltd., 1901.) Price 32s. net.

LITTLE more than a year ago a most beautifully illustrated, interesting volume on "Burma," by Max and Bertha Ferrars, appeared, which has been most favourably received. And now we have a second work on Burma. This comparatively recent part of the empire, then, receives a full share of attention, and not the least interesting part of the business is that both Mr. Ferrars and Dr. Nisbet are retired Burma forest officers. Even a cursory glance at the books will show that these two gentlemen have become most intimately acquainted with the customs and character of the Burmese. As a matter of fact, though this has not always been admitted, there is no branch of the Indian services the members of which come into closer contact with the inhabitants away from towns, than Indian forest officers. If it is remembered that in many cases the peoples in question live in out of the way places and that many of them never see a magistrate or a judge, it will readily be acceded that the selection and training of the members of the Indian forest service should be done with special care, since the happiness of millions of ignorant people depends to a considerable extent on the tact and sympathy of these officers.

Mr. Nisbet's work is divided into two volumes. In the opening chapter of vol. i. he deals with the history of Burma from the year 2266 B.C. to 1852 A.D. It will readily be understood that this sketch, occupying twenty-five pages, can only touch lightly on the history of this interesting country, and, unfortunately, the notes appear to us by no means as well arranged as they might be. Chapter ii. describes the political and commercial relations between British India and Upper Burma during the years 1853-80, relations which were anything but cordial. Here we find the great shoe question recorded, that is to say, that the British envoy had to take off his shoes and kneel down if he wished to address the King of Burma, until we come to the massacres of some fifty members of the Royal house by King Thibaw. The existing and increasing differences are further described in Chapter iii., explaining the causes of the third Burmese war. It broke out in November 1885, resulting in the annexation of Upper Burma. Apart from the utter unreasonableness of the last two kings of Burma and the cruelty of Thibaw, French intrigues contributed most powerfully to hurry on the crisis. The last straw, however, was the difference between King Thibaw and the Bombay-Burma Trading Corporation, the latter having been fined 153,000*l.* by the former.

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For ourselves, we cannot conceal that we should have been better pleased if the crisis had come without this last incident.

Chapter iv. deals with the third Burmese war, which practically lasted only from November 13, 1885, till January 1, 1886; but it was followed by five years during which the pacification of the country was ultimately effected.

Chapters vi.-viii. deal with civil and military administration, law and justice under Burmese rule, and the Royal Golden City. They contain much interesting information, of which the marriage law is perhaps the most curious. There were seven kinds of wives, of which four could not be divorced, but there was no difficulty in getting separated from any of the other three kinds.

Chapter ix. gives a rapid survey of "The British System of Administration in Burma." It shows how an orderly administration has been established in a comparatively short time as regards the organisation of the civil authorities, law, military and police, public works, forests, education and revenue. Of special interest is the development of the latter, it having risen from 2,415,000*l.* in 1886-87 to 5,242,000*l.* in 1899-1900, while the surplus has, during the same period, risen from 637,000*l.* to 1,821,000*l.* It is shown that Burma has already more than repaid all the outlay upon it during and since the third Burmese war. The net revenue includes a sum of 400,000*l.* derived from the teak and other forests, and this sum is capable of a further great increase.

Chapters x. to xiv. give a detailed account of the various branches of administration, such as the land tenure, settlements, agricultural and rural customs, minor rural industries (such as sifting for gold dust, silk weaving, dyes and dye-stuffs, pottery, fisheries, collection of wood-oil, preparing and transport of timber, cutch boiling, manufacture of cheroots, &c.); the mineral resources (coal, petroleum, tin, silver, lead, gold, jade, rubies); trade and commerce (the sea-borne trade of Burma in 1888-89 amounted to a value of 11,717,000*l.*; in 1899-1900 it had risen to 20,820,000*l.*)

The second volume opens with a chapter on Britain and France in further India and south-western China, and is followed by others on railway extensions; Burma's forest wealth and the importance of maintaining and increasing the production of teak timber; Burmese Buddhism; beliefs and superstitions; national habits and customs; the social system; national festivals and amusements; science and art among the Burmese; language and literature; folklore; archæology and the hill tribes.

It would be beyond the scope of this notice to go into the details of all these matters, but attention may be drawn to two points: As regards railways, Dr. Nisbet points out that the most pressing need is to develop internal communication before connections with the outside are established. When the time and money for the latter have become available it will be well, in the first instance, to connect Burma with India *via* Assam (or Arakan and Chittagong), then with Siam, leaving any possible connection with China, by way of Yunnan, for discussion in the future. Although we agree with this

view, it may happen that events in China will upset it, and that a connecting link between Burma and Yunnan by means of a railway may become a necessity.

The second point to which we desire to draw attention is the chapter on Burma's forest wealth. It is but natural that this is treated in a very full way, and we recommend its perusal to those who have up to date been hostile to forest conservancy in India and Burma. More especially Dr. Nisbet describes in full detail the great pains which are taken in ascertaining the full extent of existing rights and privileges, and the minuteness with which the requirements of the local population are provided, before any forest tract is declared a permanent State forest.

On the whole Dr. Nisbet's work may be called a very storehouse of information on Burma, to collect which must have taken him many years. If we were to find any faults with the work they would be that the author's facile pen has led him into too great a length, and that there are numerous repetitions in it. Still, those who have leisure to read the two handsome volumes will be richly rewarded for their trouble. They will find in it, not only a minute description of an interesting people, but also a record of the admirable manner in which civilised methods of administration have been successfully introduced in this far-away country in a remarkably short space of time.

OUR BOOK SHELF.

The Birds of South Africa. By A. C. Stark, completed by W. L. Sclater. Vol. ii. Illustrated. Pp. xiv + 324. (London: Porter, 1901.) Price 21s. net.

IN a review of the first volume of this work (part of the "Fauna of South Africa"), published in our columns soon after its appearance, reference was made to the tragic death of its author, Dr. Stark, in Ladysmith, at the commencement of the siege. The first volume was practically completed by the author before his death; but of its successor the manuscript was left (partly stored at Durban and partly at Ladysmith) in a state which rendered necessary a considerable amount of revision and addition on the part of whoever undertook the task of editing and preparing it for press. By desire of Dr. Stark's executors this labour was entrusted to Mr. W. L. Sclater, the editor of the series to which the volume belongs, who is to be congratulated on having carried out so successfully an undertaking of no ordinary difficulty. For, as all those who have tried it are well aware, the completion of another man's unfinished work is often a more difficult task than to write a volume *de novo*. As this volume may be regarded as in some respects a memorial of the lamented author, his portrait is very appropriately introduced as a frontispiece.

Since the general plan of the work was somewhat fully referred to in our previous notice, and as in this respect the present volume agrees in all essential points with its predecessor, nothing need be added on the present occasion. This volume continues the description of the perching-birds, taking up the thread at the shrikes, and ending with the swallows and pittas, so that the African representatives of five families are discussed. The editor has been fortunate in again securing the services of Mr. H. Grönvold as artist; and, needless to say, the illustrations are exquisitely drawn, and at the same time true to nature. Attention may be especially directed to the figure of puff-birds and their nest, which is based on

a photograph taken near Grahamstown, and forms a charming bit of bird-life. One illustration alone—that of rock-thrushes and their nest, on p. 182—has been reproduced direct from a photograph. A comparison of this with the above-mentioned picture by Mr. Grönvold leaves little doubt where the superiority lies. In addition to the text-figures this volume contains a map which should prove of much value to the students of the South African fauna.

While congratulating Mr. Sclater on the completion of this much of his arduous task, we may take the opportunity of mentioning that, with the help of Dr. Stark's note-books and papers he hopes ere long to bring out the two remaining volumes of the "Birds of South Africa."

R. L.

Elementary Telephotography. By Ernest Marriage. Pp. xxix + 117. (London: Iliffe and Sons, Ltd., 1901.)

THE telephotographic lens is becoming more generally used every day, so that the publication of a good elementary treatise on the chief advantages of its employment and on its successful manipulation will be received with favour. The opening chapters describe, in simple and clear language, backed up with excellent illustrations, the optical arrangements of telephotographic lenses, the different types of such lenses, the work for which they are specially adapted, and the form of camera and accessories that experience has shown to be the most satisfactory. The author lays great stress on the importance of rigidity in both the camera and support, so the beginner should take special note of this fundamental consideration.

After a chapter on the general applications of telephotography, the author gives the beginner some excellent advice in separate chapters on the special branches of the subject, namely, architecture, portraiture and the telephotography of animals, illustrating the chief points with reproductions from photographs.

Last, but by no means least in importance, are two chapters on exposure and development and useful tables. In the former it is shown, among other things, that with a little trouble the most difficult part of the whole manipulation, namely, "correct exposure of the negative," may be successfully overcome by a simple calculation, this method being rendered more practicable and easy by the use of the tables given in the latter chapter.

It may be mentioned in conclusion that the book is neatly printed on good stout paper and the illustrations are well reproduced, so that with these extra points in its favour it will form a useful addition to photographic literature.

The British Journal Photographic Almanac, 1902. Edited by Thomas Bedding. Pp. 1560. (London: Henry Greenwood and Co., 1901.) Price 1s.

THE forty-first yearly issue of this almanac is well up to the standard of former years, and contains a mine of useful information for both the amateur and the professional photographer.

Among the principal contents we notice an interesting, and what should prove a useful, article on "Introductory Notes on Tele-photography," by the editor, which brings together the more important facts on the subject. This is followed by a series of short contributions on practical subjects by prominent photographers, by numerous notes and suggestions of the year, and by an epitome of the advances made in 1901. The almanac portion of the volume and tables will be found as useful as ever, and the reader will find the collection of photographic formulæ and recipes, list of photographic societies, and other miscellaneous tables and information very complete.

In addition to the 600 pages of text, those devoted